In the Specification:

Please amend the paragraph that begins on page 4, line 15 as follows:

Brief Description of the Drawings

In order that the invention may be more readily understood, one presently preferred embodiment of the invention will now be described; with reference to the accompanying drawings. in which:

Please insert the following paragraph after the paragraph the begins on page 4, line 15:

Figure 1 is a block diagram, of a cochlear implant including a sound processor in accordance with an embodiment of the present invention.

Please insert the following two paragraphs after the Description of Preferred Embodiment heading on page 4.

Figure 1 depicts a cochlear implant system 100 embodying the present invention. In general, the cochlear implant system 100 comprises an external sound processor unit 102 and an implanted receiver-stimulator unit (RSU) 104. The RSU 104 includes an electrode array 106 is implanted into the cochlea. In the embodiment of the invention described the electrode array 106 comprises a number of rings or bands of platinum molded with a flexible silastic carrier. The electrode wires pass in a cable 108 from the electrode to the RSU 104 via a connector. The RSU 104 receives information and power from the externally worn sound processor unit 102 through a tuned receiving coil 110 attached to the RSU 104 and mounted just beneath the skin. The RSU 104 includes means 105 for generating electrical stimulating pulses to the electrode array 106. The power and data on

which electrode to stimulate, and with what intensity is transmitted across the skin to the RSU 104. from the sound processor unit 102 using an inductive link 112 operating at radio frequencies. In normal operation, the sound processor 108 picks up acoustic stimuli from a microphone 114 conveniently worn, and extracts from the signal information which is used to determine stimulation electrode rate and amplitude.

Because each patient's response to electrical stimulation is different, it is necessary to configure each patient's sound processor 102 to his or her own requirements. Thus the sound processor includes signal processing means 116 for applying a sound processing strategy, as described below. The sound processor unit 102 also has an Erasable Programmable Read Only Memory EPROM 118 which includes data and instructions to control the operation of the signal processing means 116 and which is programmed with parameters to suit each patient.

Please amend the paragraphs that begins on page 5, line 16 through page 6, line 9 as follows:

In the implementation of the first form of the invention, the differential rate stimulation processor software embodying the invention is downloaded to the SPEAR processor 116, and stored on EPROM 118. Patient map details, including frequency bands, threshold (T) levels and comfort (C) levels, are also stored on the device, Monopolar stimulation mode is used to reduce current levels and for longer battery life.

For the case where 20 electrodes 106 are available for stimulation, the apical electrodes 126 are electrodes 0 to 12, and the basal electrodes 122 are electrodes 13 to 19. The apical electrodes 120 then represent frequencies from 0 to 2700Hz; the basal electrodes 122 represent frequencies from

2700Hz to7900Hz. The stated apical electrode frequencies are sufficient to contain the first three formants of most speakers' speech.

The apical electrodes 120 are stimulated at about 250 cycles/s and the basal electrodes 122 at about 1500 cycles/s. The patient's T and C levels are carefully set to ensure that stimulation levels are suitable for the two different rates and adjustments made if necessary. The electrodes 102 to be stimulated are chosen by selecting the eight largest spectral energies within filter banks derived from the Past Fourier Transform (FFT) or the Discrete Wavelet Transform (DWT).

The values quoted above are examples. Patient-to-patient variability is large and some need higher stimulation rates on the apical electrodes and/or lower stimulation rates on the basal electrodes 122. These are determined for each individual by evaluating a number of rate combinations in every day usage.

Please amend the paragraph that begins on page 6, line 15 as follows:

In the implementation of the second aspect of the invention, the software necessary to provide a variable rate of stimulation depending on the incoming speech signal is downloaded to the SPEAR processor 116 and stored on an EPROM 118. Patient map details, including frequency bands, threshold (T) levels and comfort (C) levels, are also stored on the device. Monopolar stimulation mode is used to reduce current levels and for longer battery life.